

CLAIMS:

1. A dispensing cylinder comprising: a small diameter section, a large diameter section which communicates with said small diameter section and is capable of holding fluids, a sliding section provided in a slidable manner within said large diameter section which enables fluid to be sucked and discharged to and from said large diameter section through said small diameter section, and a connection section which connects said sliding section in a detachable manner to a suction and discharge mechanism which drives said sliding section.
2. A dispensing cylinder according to claim 1, wherein said sliding section comprises; a piston which slides inside said large diameter section, and a rod, one end of which is secured to said piston, and said connection section is provided at the other end of said rod.
3. A dispensing cylinder according to either one of claim 1 and claim 2, wherein an engagement section is provided on the outside of said small diameter section of said dispensing cylinder so as to surround the top of said small diameter section, and an opening of a sheath which covers said small diameter section, is fitted to said engagement section.
4. A large capacity dispensing device comprising: one or more dispensing cylinders having a small diameter section, a large diameter section which communicates with said small diameter section and is capable of holding fluids, a sliding section provided in a slidable manner within said large diameter section which enables fluid to be sucked and discharged to and from said large diameter section through said small diameter section, and a connection section which connects said sliding section in a detachable manner to a suction and discharge mechanism which drives said sliding section; a suction and discharge mechanism which connects to said connection section and drives said sliding section; a fitting section which fits said large diameter section in a detachable manner to said suction and discharge mechanism to secure said large diameter section to said suction and discharge mechanism; a container placement area in which a plurality of containers can be

placed; and a movement section which enables said one or more dispensing cylinders to move relative to said container placement area.

5 5. A large capacity dispensing device according to claim 4, comprising a gap
elimination mechanism which eliminates a gap between said connection section of
said dispensing cylinder, and a connection target section provided on said suction
and discharge mechanism which connects to said connection section.

10 6. A large capacity dispensing device according to either one of claim 4 and
claim 5, wherein said small diameter section of said dispensing cylinder comprises
an engagement section formed so as to protrude outward from said small diameter
section, and said container placement area contains in addition to a plurality of
containers, one or more sheaths which can be fitted by engaging an opening thereof
with said engagement section so that the sheath covers said small diameter section
of said dispensing cylinder, arranged in a manner that enables fitting to said small
15 diameter section.

20 7. A large capacity dispensing device according to any one of claim 4 through
claim 6, wherein a magnetic section capable of exerting and removing a magnetic
field into the small diameter section of said dispensing cylinder, is provided at a
predetermined position in the vicinity of a path of vertical movement of said small
diameter section.

25 8. A large capacity dispensing device according to any one of claim 4 through
claim 7, comprising an optical measuring section capable of optically measuring a
fluid level in said dispensing cylinder.

30 9. A large capacity dispensing device to according to claim 7, wherein said
optical measuring section comprises a CCD camera with an optical axis along an
axial direction of said dispensing cylinder, and a mirror which reflects light from said
dispensing cylinder into said CCD camera.

10. A large capacity dispensing device according to either one of claim 8 and
claim 9, wherein said optical measuring device is capable of relative movement
relative to two or more dispensing cylinders.

11. A large capacity dispensing device according to claim 4, wherein an identifier is affixed to a container placed in said container placement area which identifies said container, and which comprises a readout section which reads the identifier affixed to said container.
12. A large capacity dispensing device according to claim 11, wherein said identifier is affixed to a tag provided in a detachable manner on said container.
13. A large capacity dispensing device according to any one of claim 4, claim 11, and claim 12, wherein said container placement area comprises a temperature adjustment section which adjusts the temperature of containers placed in the area.
14. A method of using a large capacity dispensing device comprising: a suction and discharge step for sucking or discharging a predetermined fluid to or from a container by using a container placed in a container placement area, and one or more dispensing cylinders having a small diameter section, a large diameter section which communicates with said small diameter section and is capable of holding fluid, a sliding section provided in a slidable manner within said large diameter section which enables fluid to be sucked and discharged to and from said large diameter section through said small diameter section, and a connection section which connects said sliding section in a detachable manner to a suction and discharge mechanism which drives said sliding section; and a movement step for moving said dispensing cylinder relative to said container placement area.
15. A method of using a large capacity dispensing device according to claim 14, comprising a sheath fitting step for moving said dispensing cylinder to a position in said container placement area where said sheath is placed, and fitting said sheath by lowering said dispensing cylinder so that said sheath covers said small diameter section of said dispensing cylinder.

16. A method of using a large capacity dispensing device according to claim 14, comprising an operation checking step for, during said suction and discharge step, checking the result of suction or discharge, by optically measuring a fluid volume within said dispensing cylinder.

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17. A method of using a large capacity dispensing device according to any one of claim 14 through claim 16, comprising a container placement checking step for checking the placement of a container in said container placement area, by reading an identifier of a container placed in the area.

10 18. A method of using a large capacity dispensing device according to any one of claim 14 through claim 17, comprising a step for adjusting the temperature of a fluid by using said dispensing cylinder to transfer a fluid to a container where a temperature adjustment section which adjusts the temperature of said container is provided.

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19. A method of using a large capacity dispensing device according to any one of claim 14 through claim 18, comprising a gap removal step for eliminating a gap between a connection section of said dispensing cylinder and a connection target section provided on said suction and discharge mechanism which connects to said
20 connection section.

20. A method of using a large capacity dispensing device according to any one of claim 14 through claim 19 comprising; a step for moving a small diameter section of a dispensing cylinder vertically to a magnetic activity region provided in a path of
25 vertical movement of said small diameter section, and a step for exerting a magnetic field into or removing a magnetic field from said small diameter section in said magnetic activity region when a solution in which magnetic particles are suspended is sucked or discharged using a dispensing cylinder.